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TITLE: Radiation, Scattering, and Guidance of Electromagnetic Fields by Arbitrarily Shaped Structures Embedded in Layered Dielectric Media

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R&T PROJECT CODE: 4143128-02

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QUARTERLY PROGRESS REPORT
(April 1, 1992 — June 30, 1992)

The work on the waveguide-excited microstrip patch antenna for millimeter-wave applications has entered the final phase. An experimental validation of the analysis and its computer implementation was done in X-band, to reduce the effect of fabrication tolerances on the results. The computed and measured reflection coefficient results for a rectangular and a circular patch were found to be in close agreement. A paper on this research will be presented during the upcoming IEEE AP-S/URSI Symposium in Chicago. We have also continued to make progress in the research related to three-dimensional microstrip discontinuities and in the analysis of single and coupled integrated dielectric waveguides.